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1 UNITED STATES DISTRICT COURT
2 EASTERN DISTRICT OF MICHIGAN
3 SOUTHERN DIVISION
4 LEAGUE OF WOMEN VOTERS OF
5 MICHIGAN, ROGER J. BRDAK,
6 FREDERICK C. DURHAL, JR., JACK
7 E. ELLIS, DONNA E. FARRIS, Case No. 2:17-cv-14148-DPH-SDD
8 WILLIAM "BILL" J. GRASHA, ROSA
9 L. HOLLIDAY, DIANA L. KETOLA,
10 JON "JACK" G. LASALLE, RICHARD
11 "DICK" W. LONG, LORENZO RIVERA,
12 and RASHIDA H. TLAIB,
13 Plaintiffs,
14 vs
15 RUTH JOHNSON, in her official
16 capacity as Michigan Secretary
17 Of State,
18 Defendant.
19
20 DEPOSITION OF JOWEI CHEN,
21
22 Taken by the Defendants on Friday, September 7, 2018, at the
23 offices of Dickinson Wright, PLLC, 350 South Main Street,
24 Suite 300, Ann Arbor, Michigan, at 9:34 a.m.
25

Deposition of Jowei Chen - 9/7/2018

League of Women Voters of Michigan, et al. v. Ruth Johnson, Secretary of the State of Michigan

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1 APPEARANCES:

2

3 Counsel for the Plaintiffs:

4 MR. JOSEPH H. YEAGER, JR. (IN 2083-49)

5 MR. KEVIN M. TONER

6 Faegre Baker Daniels, LLP

7 300 North Meridian Street

8 Suite 2700

9 Indianapolis, Indiana 46204

10 317-237-0300

11 Jay.Yeager@FaegreBD.com

12 Kevin.Toner@FaegreBD.com

13

Counsel for the Defendant:

14 MR. MICHAEL A. CARVIN

15 Jones Day

16 51 Louisiana Avenue, N.W.

17 Washington, D.C. 20001-2113

18 202-879-3939

19 macarvin@jonesday.com

20

21 Co-Counsel for the Congressional Delegation, Intervener:

22 MR. JASON TORCHINSKY

23 45 North Hill Drive

24 Suite 100

25 Warrenton, Virginia 20186

26 540-341-8808

27 Jtorchinsky@hvjt.law

28

29 Co-Counsel for the Congressional Delegation, Intervener:

30 MR. BRIAN D. SHEKELL (P75327)

31 Clark Hill

32 500 Woodward Avenue

33 Suite 3500

34 Detroit, Michigan 48226

35 313-965-8803

36 Bshekell@clarkhill.com

37

38 REPORTED BY: Ms. Marjorie Covey, CSR-2616

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40

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1 Ann Arbor, Michigan

2 September 7, 2018 - 9:34 a.m.

3 THE REPORTER: Do you solemnly swear the testimony
4 you are about to give will be the truth, the whole truth and
5 nothing but the truth?

6 MR. JOWIE CHEN: Yes.

7 JOWIE CHEN,

8 HAVING BEEN CALLED BY THE DEFENDANT AND SWORN:

9 EXAMINATION

10 BY MR. YEAGER:

11 Q. Good morning, Professor Chen. How are you?

12 A. Good morning, sir, I'm doing well.

13 Q. I know you had your deposition taken before, I just want to
14 make two points at the beginning. The court reporter will
15 need a verbal response, not a nod or something like that to
16 make the record clear. And if there is any questions that
17 I'm asking that you are confused about, please ask me to
18 clarify.

19 Will you swear on that?

20 A. Yes, sir.

21 Q. Okay. Is there any reason, medications or otherwise that you
22 can't testify fully or truthfully today?

23 A. No, sir.

24 (At 9:35 a.m. Exhibit 1 marked.)

25 Q. Okay. If you could look at what's been marked as Chen

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1 question.

2 Q. What does your algorithm do with respect to the requirements
3 of the Voting Rights Act?

4 A. I did not explicitly program the algorithm to try and
5 interpret and account for the Voting Rights Act in any
6 particular way.

7 As you -- as my report explains, I dealt with a
8 number of majority-minority districts in surrounding areas in
9 a particular way. And obviously I'm happy to go through that
10 if that's responsive to your question.

11 Q. Basically you just froze all the majority-minority districts
12 in the state and the Senate, House and Congressional plans?

13 A. That's a part of what I did.

14 Q. What else did you do?

15 A. Okay. I'll start -- I'm going to have to start with each
16 plan individually. So I'll go through in detail and maybe
17 you can stop me if this isn't responsive to your question.

18 So I guess I'll start with the Congressional plan.

19 And certainly for the Congressional plan --

20 Q. Maybe this will be simpler, did you do anything other than
21 freezing the majority-minority districts to account for the
22 requirements of the Voting Rights Act?

23 MR. YEAGER: Just to clarify, are you withdrawing
24 the prior question?

25 MR. CARVIN: I'm just trying to cut to the chase.

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1 so as to try to not break, not break counties.

2 Q. This will be my last question on this. It's quite clear that
3 the 95 to 105 percent threshold predominates over county
4 lines regardless, right, because of the priorities you said?

5 A. Well I gather that from (e), among other parts of the statute
6 here.

7 Q. Okay. All right. Let's turn to (f), right after that, okay?

8 A. Okay.

9 Q. Do you see (f) right underneath (e) that we were talking
10 about?

11 A. Yes.

12 Q. It says, does it not, if it is necessary to break county
13 lines to stay within the range of allowable population
14 divergence provided for in subdivision (d), the fewer whole
15 cities or whole townships necessary shall be shifted between
16 two cities or townships, both of which will bring the
17 districts into compliance with subdivision (d) and (h), the
18 city or township with the lesser population shall be diluted,
19 do you see that?

20 A. Yes, I see that.

21 Q. If you could turn to page 62 and 63 of your report.

22 A. (Witness complied).

23 Q. This describes what the algorithm does with county and
24 municipal breaks. But it contains no discussion of the
25 provision, or the concept I just talked about that in the

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1 event of a county or municipal line break, the fewest whole
2 cities or whole townships necessary shall be shifted.

3 Was that something you put in your algorithm?

4 A. What the algorithm does is when it's going through, say,
5 iterative changes and redrawing the boundaries between
6 districts --

7 Q. Right.

8 A. -- it will build up a district, first in order to fill up a
9 county. And then, say, it has to intrude into a neighboring
10 county in order to complete the district, it will start
11 randomly adding municipalities --

12 Q. Right.

13 A. -- cities and townships, and add just enough to achieve an
14 equally populated district. So that's what the algorithm
15 does.

16 Q. Right. But it doesn't -- there is nothing in the algorithm
17 that says shift as few as possible, right? If you had one
18 district -- well, is there any provision that says shift as
19 few as possible?

20 A. You're asking me to read (f), is that right?

21 Q. Yes.

22 A. I see that on the second line there is the phrase, the fewest
23 whole cities or whole townships necessary.

24 Q. Right. And is there a provision in the algorithm that
25 requires the shifting of the fewest whole cities or townships

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1 when a county line is broken?

2 A. Well what I'm explaining is what the algorithm does is like I
3 said when it intrudes into a new county, it adds -- it keeps
4 on adding municipalities chosen at random and adds enough to
5 bring it to an equally populated district.

6 Q. So just so we're clear, you didn't have any specific
7 directions in the algorithm to shift the fewest; you're just
8 saying that that's what you think the result --

9 A. It's not going to, say, create an equally populated district
10 and then keep on adding municipalities is what I'm
11 clarifying.

12 Q. Right. Okay. But there is no specific directive in the
13 algorithm to shift the fewest counties, is that correct?

14 A. Well I'm just clarifying what the algorithm does.

15 Q. Right.

16 A. It adds enough just to get to an equally populated district,
17 and then stops.

18 Q. Right. And you're saying --

19 A. So I think you're asking, are there any extra steps
20 beyond that, the answer is no.

21 Q. Okay. Now let's assume that, for example, if you could go to
22 the last sentence of (f), between two cities or townships,
23 both of which will bring the districts into compliance with
24 subdivision (d) and (h), the city or township with the lesser
25 population shall be shifted.

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1 Was the algorithm directed, when it had a choice,
2 to bring it into the population threshold to choose the city
3 or township with the lesser population?

4 A. It was not intentionally, say, advantaging the city or the
5 township with the lesser population.

6 Q. Okay. All right. Do you know if you -- so you didn't get
7 into that at all.

8 Do you know how many cities or townships were
9 shifted, for example, in the House plans?

10 A. You're asking how many cities or townships were shifted in
11 counties that are broken, is that right?

12 Q. Well obviously, yes, that would be the context in which it
13 would arise.

14 A. Okay. And the answer is that I did not systematically go and
15 analyze that with the enacted or simulated maps.

16 Q. Okay. With respect to the Senate and the House plans, do you
17 know how close to perfect population equality the simulated
18 plans were?

19 A. Let me take that one at a time.

20 With respect to the Senate and the House maps,
21 perfect -- how close to perfect population, the simulated or
22 the enacted?

23 Q. Simulated.

24 A. The simulated maps.

25 Well, I followed the criteria, the statutory

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1 A. Okay, I'll explain the basis of my answer.

2 I am comparing two situations here and putting
3 together two sets of findings. And obviously I'm putting
4 together findings regarding the partisan outlying nature of
5 the enacted plan as compared to the computer-simulated
6 processed plans.

7 And then I'm putting together that with my finding
8 regarding the statistically outlying nature of the Reock
9 score and the compactness scores as defined by the statutory
10 criteria. And as we talked about sometime earlier today,
11 those Reock and compactness scores that I calculated, so I'm
12 putting together those two findings.

13 And I'm saying that it is -- how likely it is that
14 the plan that we're seeing here was one that was produced by
15 the sort of nonpartisan process that the computer was
16 programmed to follow, and I'm finding that to be very
17 statistically unlikely because of its partisan outlying
18 nature.

19 So putting those findings together leads me to
20 conclude that it's something to do with the partisan outlying
21 nature of the plan, that was related to the statistically
22 outlying nature of the compactness scores that I was
23 reporting on.

24 Q. Right. But they could have lower or worse compactness scores
25 simply because they didn't emphasize compactness as much as

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1 your algorithm, right?

2 A. I wasn't analyzing that hypothetical as a, say an alternative
3 hypothesis.

4 Q. So the answer to me is, yes, it's certainly possible?

5 A. I have no basis for saying that it is or is not. I'm just
6 telling you that I did not analyze that hypothetical that
7 you're putting forward to me.

8 Q. But nonetheless, you wrote down in your report that you can
9 state with over 99.9 percent statistical certainty that the
10 enacted Congressional plan created districts less compact
11 than that would have reasonably emerged from a districting
12 process not driven by partisan intent.

13 A. Yes.

14 Q. Well what if it was a process that was not driven by partisan
15 intent, but wasn't driven by compactness?

16 A. Same answer as before. That is not what, the analysis I'm
17 referring to right here.

18 What I was saying before is that what I mean in
19 that last sentence, when I'm saying emerged from a
20 districting process not driven by partisan intent, I'm
21 describing the process I programmed.

22 Q. So really what you're saying is that reasonably would have
23 emerged from your districting process that was not driven by
24 partisan intent. Is that right?

25 A. That's what I said sometime ago and that's what I'm saying

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1 A. The point is obviously not that I am saying that this
2 computer code is the exhaustive list of all possible ways, as
3 somehow the only way that anybody could ever produce a
4 nonpartisan districting plan.

5 Q. Okay. So then what is your statistical certainty analysis
6 based on, whether it's the 95 percent confidence, other than
7 a comparison of your simulated plans to the enacted plan?

8 A. Well it is actually just that, it's a comparison of a
9 simulated to the enacted plan.

10 Are you asking me about the methodology or are you
11 just asking me about the fact that I'm comparing simulations
12 to the enacted plan?

13 Q. And that your levels of statistical certainty are based on
14 comparison of the simulated plans to the enacted plan, which
15 I think you just answered.

16 A. It is. What I was trying to clarify a moment ago is that I
17 don't think you had quite correctly described the statistical
18 methodology by which I'm arriving at, say, the statement on
19 page 14 about 99.9 percent statistical certainty.

20 But I think you got it correct with respect to the
21 fact that I'm obviously comparing simulated plans to the
22 enacted plan.

23 Q. Okay. Are you contending that the thousand simulations are a
24 random sample of all nonpartisan plans?

25 A. I was not even interested in characterizing the whole

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1 universe of all possible nonpartisan plans, especially if
2 they're not drawn pursuant to the criteria that I am building
3 into my computer code.

4 So that's not a question I would have been
5 interested in seeking to analyze.

6 Q. So you didn't use any of the methods that people could use to
7 figure out whether your thousand simulated plans are a
8 representative sample of all potential nonpartisan
9 redistricting configurations?

10 MR. YEAGER: Objection, assumes facts not in
11 evidence.

12 You may answer.

13 THE WITNESS: Okay. Compared to all possible
14 nonpartisan redistricting plans.

15 I don't know if your question is seeking to include
16 even plans that are not drawn with pursuit of the criteria
17 that I programmed into my algorithm. Obviously I was only
18 trying to produce the sort of plans that followed the
19 criteria as I've laid out in my computer code and as I've
20 described in my report.

21 So I'm not interested in, for example, the broader
22 set -- the broader universe of plans that are not drawn in
23 pursuit of these criteria. It's just not something I
24 analyzed.

25 BY MR. CARVIN:

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1 about political geography.

2 Q. And you've never been hired as a consultant outside of this
3 context on optimization methods more generally?

4 A. On optimization methods?

5 Q. The kind of thing you described with the Fed Ex, for example.

6 A. Oh, yeah, I'm not a consultant for Fed Ex or any entity like
7 that.

8 Q. Okay.

9 A. If I were, I probably couldn't have given you that example.

10 Q. Right. So you've presented a number of analyses in your
11 report here of districts, particularly in the past elections,
12 right? The 2006 through 2010 statewide elections, and the
13 2012 through 2016 elections.

14 My question is are you doing any analysis or making
15 any forecasts about results that will reasonably occur in
16 2018 or 2020 relative to the three offices at issue in this
17 case?

18 A. I did not make any forecasts regarding specifically what I
19 expect to happen in 2018 or 2020, beyond generally just
20 analyzing the enacted districts.

21 Q. Right. But you're not making any predictions in terms of the
22 number of Republican congressman, Republican state
23 legislators that are going to be elected in 2018?

24 A. Not beyond just generally analyzing the partisan of the
25 districts. So I think I'm generally not trying to say, for

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1 example, that somehow I think that in November 2018, the
2 Republican party will win three more House seats than it has
3 in the previous election, nothing like that where I'm making
4 a new prediction relative to past partisan performance,
5 nothing specific to 2018.

6 Q. But even generally, you're not making any prediction about
7 whether or not Democrats will achieve at least proportional
8 representation in the Congressional delegation, Senate
9 delegation and House delegation in 2018 or 2020, right?

10 A. Okay. That's a little bit of a different question. I
11 definitely am not analyzing whether either party will achieve
12 proportional representation in any election really.

13 Q. All right. And you're not making any predictions about
14 whether Democrats will achieve any level of representation in
15 the 2018 or 2020 elections with respect to the three offices
16 at issue?

17 A. Again, only insofar as I've generally analyzed and reported
18 on the partisanship of the enacted districting plans.

19 Q. Right.

20 A. So I've generally characterized the partisanship of those
21 plans and obviously that is a characterization that could
22 apply in an election like 2018 or 2020. But it's not a
23 characterization that is specific to 2018, as opposed to
24 2016, as opposed to 2014.

25 Q. Well all your other things are backward looking, all the

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1 analyses are of the elections that have already occurred. My
2 question is are you inferring from what has occurred in the
3 past any predictions or statements to a reasonable degree of
4 professional certainty about what will occur in the 2018
5 elections under these redistricting plans?

6 MR. YEAGER: Asked and answered.

7 You may answer.

8 THE WITNESS: Like I said, all I'm doing is
9 characterizing the general partisan performance of those
10 districts. That characterization is generally going to be
11 valid as -- if the districting plan continues to be in place.

12 BY MR. CARVIN:

13 Q. So you are -- what do you mean by likely to be valid? You're
14 saying that the numbers produced in 2018 will be very similar
15 to, identical to the numbers in your report?

16 MR. YEAGER: Asked and answered.

17 You may answer.

18 THE WITNESS: No. I certainly am not predicting
19 that because -- I'll just throw out a random example. I
20 calculated that in the enacted Congressional plan, using
21 recent past statewide election results, you can see that nine
22 districts favor Republicans and five favor Democrats. It's
23 not saying that I'm specifically guarantying or predicting
24 that there will be exactly nine districts going for
25 Republicans in 2018.

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1 It's a general characterization of the partisanship
2 of that districting plan which, if that districting plan is
3 still in place in November 2018, then it's still an accurate
4 characterization of that districting plan for the purpose of
5 2018, as it was for 2016, as it was for all earlier years.

6 It's just a characterization. I'm not saying, for
7 example, that I think there is going to be a two percent
8 Republican tide in 2018 relative to 2016. That would be I
9 think what an election specific prediction does.

10 BY MR. CARVIN:

11 Q. I don't want to focus on the word specific. Are you opining
12 on the likelihood of electing seven Democrats in the
13 Congressional delegation in 2018 based on all the numbers in
14 your report?

15 A. Only insofar as in general, what I am opining on is that, for
16 example, the enacted Congressional plan is a nine-five plan,
17 meaning that what my opinion is is that the long-run average
18 is going to be, over any number of elections, is going to be
19 that an expectation that the Republicans will win nine
20 districts out of 14 in the Congressional plan.

21 Now I'm not characterizing that as a 2018 specific
22 prediction, but obviously you can see how that prediction
23 could cover the 2018 election year. I just want to make that
24 distinction.

25 Q. I'll ask you again. What percentage likelihood is there of

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1 electing seven Democrats in 2018 or 2020 based on your
2 analysis in this report? Are you opining on that?

3 MR. YEAGER: Asked and answered.

4 You can answer.

5 THE WITNESS: I'm not arriving at a prediction to
6 say there is X percent probability that the Republicans will
7 win seven, Y percent probability that the Republicans will
8 win eight, nothing like that.

9 As I said, I'm characterizing the partisanship
10 which I take to mean -- to say that in the long-run
11 expectations Republicans are going to win in the enacted
12 Congressional plan nine seats and Democrats will win five.

13 BY MR. CARVIN:

14 Q. The long-run expectation in this case is the 2020 elections,
15 you understand that, right?

16 A. Well I'm trying to analyze really all elections for a number
17 of years.

18 And I understand that some of those are in the
19 past, and I appreciate your making this distinction that we
20 only have 2018 and 2020 ahead of us.

21 Q. Okay. But you don't think that this litigation is going to
22 affect the 2018 elections, do you?

23 A. That's completely outside of my expertise.

24 Q. Do you have a calendar? You don't really --

25 A. All right. I'll grant you that we're pretty darn close to

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1 So you got the number -- the statewide elections
2 predict the number of Republican seats in the Congressional
3 elections, right?

4 MR. YEAGER: Objection, incompletely states the
5 document.

6 You may answer.

7 THE WITNESS: What I'm reporting here is that there
8 are nine districts that, using the statewide elections, are
9 favoring Republicans over Democrats in both the 2006 and
10 2010, as well as the '12 to '16 statewide elections. And I
11 can see that obviously those nine districts are the same ones
12 that have been electing Republicans.

13 BY MR. CARVIN:

14 Q. And you would count a Republican district as anything that's
15 a 50.1 percent district under the statewide, correct?

16 A. That's correct. I'm simply characterizing them as having
17 more Republican votes or more Democratic votes as a share of
18 the total summed up aggregated two-party votes across all
19 those statewide elections.

20 Q. So you would equate a 51 percent Republican district as a
21 Republican district, as well as a 65 percent Republican
22 district?

23 A. I wasn't really equating them other than saying I'm
24 characterizing them as Republicans.

25 Q. Right.

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1 of an outlier or red flag automatically by virtue of being
2 above X percent.

3 Q. I can give you examples, but in your report you use the words
4 Democratic districts have been packed and cracked. And I'm
5 just trying to get your definition of those terms. What's
6 your definition of a packed district?

7 A. So because you're talking about when I use those terms at the
8 end of my report, right?

9 Q. Certainly at the end, but I think there was a couple of
10 occasions before that. But regardless --

11 A. Okay.

12 Q. -- what's your definition --

13 A. Of packing and cracking, okay.

14 I'll give you my best shot. I'll qualify in
15 general that by saying that as a political scientist I don't
16 understand those terms to mean anything precise in any
17 academic sense. Meaning that there is no standard or set
18 political science definition of how do you quantify what
19 rises to the level of clear cracking or packing. There is
20 just not an objective scientific definition of that.

21 And so when I use the term cracking and packing,
22 those are terms that are really just borrowed from what
23 people use colloquially, from what the popular press uses,
24 from what journalists use. Obviously journalists use those
25 terms.

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1 And I generally understand what the popular media
2 means when it uses those terms. Again, I don't have a
3 precise academic objective definition of crack and packing.
4 But I tried to operationalize that in the context of my
5 analysis here by taking what I understand others to mean by
6 those terms, by the terms crack and packing.

7 So I'll give you now my best shot at explaining how
8 I operationalized and defined those terms here in my report.
9 So I just wanted to make all those qualifications first.

10 What I call a -- we will just start with packing.
11 What I operationalize a packed district to be, and again this
12 is just my best shot at trying to put an operation to what
13 others mean by the term, is to say if there is a district
14 that is a certain percentage Democratic vote share, just as
15 an example, and it's an enacted district, and it has a
16 certain percentage Democratic vote share, and then I go look
17 at alternative computer-simulated districting plans, and look
18 at the same district in that same geographic area, as the
19 enacted district, and I look at several simulated districts
20 in that same geographic area, and I look at the partisan vote
21 share, the Democratic vote share of those alternative
22 computer-simulated districts, and I see that the vast
23 majority of those alternative computer-simulated districts in
24 that same geographic area are less Democratic leaning, have a
25 lower Democratic vote share, in other words, a higher

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1 Republican vote share, than that enacted district, that I
2 just for shorthand call packed.

3 Again, not a scientific term in any way, just
4 trying to operationalize it.

5 Q. I'm confused. You're saying that if the alternative plans
6 have a lower Democratic percentage, then anything above that
7 percentage is packed?

8 A. No. I got it backwards. And I apologize if I misspoke and
9 mislead you there. I'll put some actual numbers to try to
10 make this clearer.

11 So let's suppose that the enacted district number
12 one, hypothetical district, has a 70 percent Democratic vote
13 share. And then we look at the computer-simulated districts
14 in that same geographic area, covering the same geographic
15 area, and they all have lower than a 70 percent Democratic
16 vote share, that I just label packing.

17 Q. All right. Let's assume district one has got a 53 percent
18 Democratic vote share, and all the alternatives are at 52.
19 Are you arguing that the 53 percent is a packed district?

20 A. If it's one thousand out of one thousand, I'm applying that
21 same shorthand label packing. It's just a purely
22 mathematical operationalization.

23 Q. So any time an enacted plan in this case has a higher
24 Democratic percentage than the simulated plans, it's a packed
25 district?

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1 A. Than virtually all the simulated districts in that same
2 geographic area, I'm labeling that packing.

3 Q. And that's for above 50 percent.

4 For below 50 percent, is the district cracked when
5 the enacted plan has a lower Democratic percentage than the
6 simulated plans?

7 A. Let me -- if I could, let me just review my report and I want
8 to make sure I get this absolutely right, so if you could
9 allow me a moment.

10 Q. Yes.

11 A. Okay, thank you for that.

12 Yeah, I think your characterization there was --
13 basically I'm going to put it in my own terms to make sure I
14 got it right, but I think this is the same thing as what
15 you're saying.

16 So for cracking, what we're describing here is if
17 there was a district where, and I believe I used 95 percent,
18 if 95 percent of the simulated districts are on the other
19 side, in terms of partisan vote share, then it's
20 characterized as, with the label crack, cracking.

21 Q. Just to be clear, when you say on the other side, you don't
22 necessarily mean that the seat switches, but are on the other
23 side in terms of the higher Democratic percentage?

24 A. Correct. I'm not necessarily saying anything about the seat
25 flipping above or over 50 percent. It's purely relative to

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1 the enacted district comparison.

2 Q. So you would call any Democratic district cracked at 48
3 percent if the middle 95 percent was 48.5 or higher?

4 A. Right. The 50 percent cutoff that I think you're thinking
5 about, that's not relevant here.

6 Q. No, but can you answer my question?

7 A. Sure, I apologize. That's right.

8 I mean you're just looking at whether there are,
9 say, something like 95 percent or more of the simulated
10 districts that are all on one side or the other.

11 Q. Okay. So you're using packed and cracked in a very specific
12 way that applies only to your simulation analysis. You're
13 not using it in the way that's used in most political science
14 literature, is that what I understand?

15 A. Well I'm not going to try to characterize how, quote, most
16 political science literature uses it. I don't have the basis
17 for answering that.

18 I am acknowledging that this is an
19 operationalization of the cracking and packing terms that is
20 specific to my analysis here.

21 Q. Do you have an understanding of how the term is generally
22 used in political science, packed for example?

23 A. Well the reason I gave that caveat, that long caveat at the
24 beginning, I'm saying look, I don't understand the terms
25 packing and cracking to mean anything very precise in

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1 of these rows was inside or outside of that 95 percent
2 interval.

3 Q. Okay. So let's look at D3 in your appendix, D3, okay. And
4 you may have to go back, I apologize, to make sure I'm not
5 misleading you. But you listed District 1 on page 56 as one
6 of these partisan outliers. You can keep going back if you
7 need to, it's page 56.

8 A. I gotcha.

9 Q. So I want to ask you some questions about CD-1.

10 The only thing I see on your graph there is a more
11 Republican district, a somewhat safer Republican district.
12 Why would that be a packed or cracked partisan outlier? Am I
13 misunderstanding? The star is the enacted plan district,
14 right?

15 A. Correct.

16 Q. And the thing to its right, meaning more Republican, is the
17 50 percent of the enacted plan -- the simulated plans that
18 overlap by 50 percent.

19 So how could CD-1, if it's less Republican, be a
20 pro-Republican district?

21 A. Okay. Well all I'm doing here as I said a moment ago is I am
22 just looking at -- and this is a purely technical exercise.

23 Q. Okay.

24 A. I'm just looking at the middle 95 percent range. And I'm
25 just asking is that red star representing the enacted

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1 Congressional District 1, each Congressional district here,
2 is it inside or outside of that range. And if it's outside,
3 I'm listing that in that paragraph.

4 Q. Okay.

5 A. And all I meant to say is I didn't -- I obviously didn't
6 intend to, and I apologize if I accidentally misled you with
7 that paragraph regarding the partisan direction of that. I
8 simply said what's a 95 percent interval, and if it was
9 outside of that, then it would be listed.

10 Q. All right. So I had a lot of those questions along those
11 lines, but I'm again going to cut to the chase with you.

12 If I understand what you just said correctly, if
13 the enacted plan is outside of the range represented by
14 these, I don't know what else to call it, the concentrated
15 circles, I don't want to call them blobs, but if they're
16 outside of that, then that's the decision-making process that
17 led you to include them among the districts that you
18 categorized as partisan outliers; whereas if the star appears
19 within those districts, within the blobs, then you don't
20 characterize them that way?

21 A. That's basically right . Again, it is a purely statistical
22 exercise here. And obviously you and I talked quite a bit at
23 length earlier today about how I was attempting to just
24 operationalize, even though I don't have a particular
25 scientific understanding of the terms cracking and packing, I

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1 just took a very specific statistical identification here
2 where I said, what's the 95 percent interval, that middle 95
3 percent range, and is the enacted district within or outside
4 of it.

5 That's it. I just wanted to make sure that was
6 clear.

7 Q. Okay. Well even in light of that, I thank you because that
8 saved us a boat load of time.

9 I'm still a little confused.

10 If you could turn to Appendix D6 on page 78, right?
11 And again, check me on page 56, but I think you list District
12 8 as one of these partisan outliers, that Senate District 8
13 if you want to check me on page 56?

14 A. On 56.

15 Q. I'm representing to you that you listed SD-8 as one of the
16 partisan outliers. If you want to check my veracity you can
17 look at page 56 and see if I got that right.

18 A. I gotcha.

19 Q. So now I have a question about SD-8 based on the thing on
20 page 78.

21 I would have thought that that circle would have
22 been between the two blobs, so it wouldn't have been a
23 partisan outlier under the mechanistic view that you just
24 described. So how did SD-8 wind up on this list?

25 A. Right. I think what you're saying is you're seeing two

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1 CERTIFICATION OF COURT REPORTER AND NOTARY PUBLIC

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4 STATE OF MICHIGAN)

5) SS

6 COUNTY OF MUSKEGON)

7

8 I certify that this transcript, consisting of 281
9 pages, is a complete, true and correct record of the
10 testimony of JOWIE CHEN held in this case on September 7,
11 2018.

12 I also certify that prior to taking this deposition
13 JOWIE CHEN was duly sworn to tell the truth.

14

15

16 DATE: September 9, 2018

17

18

19 MARJORIE A. COVEY, CSR-2616
20 141 East Michigan Avenue, Suite 206
21 Kalamazoo, MI 49007
22 1.800.878.8750

23

24 Notary Public Expires: October 14, 2021, Muskegon
25 County, Michigan/Acting in the State of Michigan.

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